ATTACHMENT F

FACT SHEET

GENERAL WASTE DISCHARGE REQUIREMENTS
AND GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT FOR EXISTING MILK COW DAIRY CONCENTRATED ANIMAL FEEDING OPERATIONS WITHIN THE CENTRAL VALLEY REGION
BOARD ORDER NO. R5-2010-0118
NPDES NO. CAG015001

A. INTRODUCTION

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order. A permit writers guidance manual reflecting the 20 November 2008 US Environmental Protection Agency Final Rule for Concentrated Animal Feeding Operations (CAFOs) has not yet been released. Instead, this Order has been prepared using the federal CAFO regulations and the USEPA "NPDES General Permit for Dischargers from Concentrated Animal Feeding Operations (CAFOs) in New Mexico" (NMG010000) as a basis for developing permit requirements. The organization of this Order is, however, based on the General Order Waste Discharge Requirements (WDRs) for Existing Milk Cow Dairies, Order No. R5-2007-0035.

This Order was modified on XX Month XXXX in response to the decision of the United States Court of Appeals for the Fifth Circuit in *National Pork Producers Council, et al v. United States Environmental Protection Agency* (5th Cir. 2011) 635 F 3d 738. The Fifth Circuit Court decision vacated all provisions of the 20 November 2008 EPA Final Rule that require CAFOs that "propose to discharge" to apply for an NPDES permit.

This Order offers NPDES coverage to existing milk cow dairies regulated by the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board). It implements the State laws and regulations relevant to confined animal facilities and the Federal Clean Water Act and regulations and guidelines adopted thereunder. This Fact Sheet is a part of the Order.

All dairies covered under this Order are required to:

- Comply with all provisions of the Order
- Have submitted a Waste Management Plan for the production area
- Have developed and be implementing a Nutrient Management Plan (NMP) for all land application areas

- Monitor wastewater, soil, crops, manure, surface water discharges, and storm water discharges
- Monitor surface water and groundwater
- Keep records for the production and land application areas
- Submit annual monitoring reports

Animal operations that are not milk cow dairies are not regulated by this Order. New animal operations that are not milk cow dairies will be regulated using individual Waste Discharge Requirements. Existing animal operations that are not milk cow dairies will eventually be regulated using General Order Waste Discharge Requirements. As necessary and appropriate, such operations can be placed under individual NPDES Orders, or General NPDES Orders can be developed for classes of facilities. Resource constraints limit the speed at which such Orders can be developed.

B. CENTRAL VALLEY WATER BOARD AUTHORITY TO ISSUE WASTE DISCHARGE REQUIREMENT ORDERS

The Central Valley Water Board authority to regulate waste discharges that could affect the quality of the waters of the state, which includes both surface water and groundwater, and the prevention of nuisance, is found in the Porter-Cologne Water Quality Control Act (California Water Code Division 7). Regulation is accomplished through issuance of WDRs or the waiver of such requirements. All confined animal facilities are subject to this regulatory authority.

Under the federal Clean Water Act, discharges of pollutants from point sources to waters of the United States are also subject to the NPDES permitting requirements. The Clean Water Act and the federal regulations implementing the Clean Water Act define certain confined animal facilities as point sources that are subject to NPDES permitting requirements.

Pursuant to California Water Code Division 7, Chapter 5.5, the Regional Board is authorized to implement the NPDES permitting system in California. The Regional Board issues NPDES permits pursuant to California Water Code Sections 13263 and 13377. These NPDES permits must be consistent with federal regulations and California Water Code Division 7, including Chapter 5.5, and implement State Water Resources Control Board (State Board) and Regional Board plans and policies. These NPDES permits also serve as WDRs under California Law

This Order is an NPDES General Permit that will apply to existing dairy facilities in the Central Valley Region that are defined as point sources under the federal regulations. The Central Valley Water Board may determine that some individual

facilities that are defined as point sources are not appropriately regulated under a general order and may require owners and operators of such facilities (Dischargers) to file a Report of Waste Discharge for an individual NPDES Permit.

C. DAIRY FACILITIES IN THE CENTRAL VALLEY REGION AFFECTED BY THIS ORDER

Title 40 Code of Federal Regulations (CFR) Section 122.23 (b)(1) defines animal feeding operations (AFOs) as operations where animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and where vegetation is not sustained in the confinement area during the normal growing season Title 40 CFR Section 122.23 (b) establishes certain facilities as Concentrated Animal Feeding Operations (CAFO) if they meet certain size and discharge conditions. A dairy CAFO is any dairy AFO that is either large (700 mature dairy cows), or which is of medium size (200-699 mature dairy cows) and discharges pollutants to waters of the United States. Title 40 CFR Section 122.23 (b)(9), (c)(2) and (c)(3) define a small CAFO and lay out conditions under which a small (less than 200 mature dairy cows) AFO may be designated as a CAFO.

This Order applies to owners or operators (hereinafter Dischargers) of any existing dairy AFO that meets a definition of a large CAFO and discharges ~~or proposes to discharge~~ pollutants to waters of the United States on or after 17 October 2005. It also applies to Dischargers of any existing dairy AFO that meets the definition of a medium CAFO (in other words, that has discharged pollutants to waters of the United States on or after 17 October 2005~~), or any medium or small existing dairy AFO that proposes to discharge pollutants to waters of the United States.~~ . Finally, this Order applies to AFOs designated as small CAFOs. Under this Order, a small AFO may be designated as a CAFO by the Central Valley Water Board upon determining that the AFO is a significant contributor of pollutants to waters of the United States. The Definition of small CAFO (Attachment H) lays out the factors that the Board shall consider in making this designation.

Existing milk cow dairies of any size are currently regulated under General Order No. R5-2007-0035 unless their herd size has expanded more that 15% beyond the maximum number of mature dairy cows reported in a 2005 Report of Waste Discharge, which was due to the Central Valley Water Board on 17 October 2005. Existing milk cow dairies that have expanded more than 15% or new dairies which began milking after 17 October 2005 are regulated under Individual

Waste Discharge Requirements (WDRs). This Order applies only to Existing Milk Cow dairies that meet the CAFO definition above, and for those dairies, replaces coverage under General Order R5-2007-0035. It does not apply to dairies that meet the CAFO definition but which have expanded as described above, or to new facilities. Such dairies would be placed under Individual NPDES CAFO permits.

General Order R5-2007-0035 prohibits discharges from the production area and discharges of manure and/or wastewater from cropland. It requires monitoring of storm water discharges from cropland, even though such cropland is required to be managed under a Nutrient Management Plan (NMP) certified by a specialist who is certified in developing NMPs. The General Order requires monitoring of discharges of irrigation tailwater when manure or wastewater was applied less than 60 days prior to irrigation.

Because of the restrictions on discharges of pollutants to surface water in the General Order, existing dairies that are operating now and have operated in the past in compliance with the General Order and Title 27 will not be required to obtain coverage under this Order. ~~Few existing dairies are expected to propose to discharge pollutants to surface water, as that would be an intentional violation of the General Order.~~ The dairies that will be required to obtain coverage under this Order will be those dairies, of whatever size, that since 17 October 2005 have discharged pollutants to waters of the United States. ~~Also, if a dairy is designed, operated, and/or maintained such that discharge of pollutants to waters of the United States will occur, the dairy will be assumed to "propose to discharge pollutants to waters of the United States" within the meaning of the federal CAFO regulations and will be required to obtain coverage under this Order.~~

Periodically, staff identifies off-property discharges of manure or process wastewater from existing dairies. Sometimes the discharges are onto adjacent property not owned by the Discharger. Sometimes the discharges are into ditches that do not have any connection with surface water. All existing dairies that have had discharges to surface water since 17 October 2005 will be evaluated to determine if the discharges trigger a duty for the Discharger to apply for and receive coverage under this Order.

This Order also includes provisions to allow Dischargers of any existing large CAFO that does <u>not</u> discharge ~~or propose to discharge~~ pollutants to waters of the United States to request coverage under this Order. Similarly, Dischargers of any existing medium (200-699 mature dairy cows) or small (less than 200 mature dairy cows) dairy AFO may also request coverage under this Order. Those

dischargers will be bound by the requirements of this Order in the same manner as all other Dischargers.

Once a facility is covered under this Order, the provisions of the Order apply with respect to all animals in confinement at the operation and all waste generated by those animals or the production of those animals, regardless of the type of animal.

D. HOW DOES AN NPDES PERMIT DIFFER FROM WASTE DISCHARGE REQUIREMENTS?

An NPDES Permit which is based on provisions of the Federal Concentrated Animal Feeding Operations (CAFO) rule has several broad differences from General Waste Discharge Requirements (WDRs) such as the General Order for Existing Milk Cow Dairies.

1. NPDES permits rely on the Clean Water Act as authority for permit requirements; WDRs rely instead on California law, including, but not limited to the Porter Cologne Water Quality Control Act.
2. An NPDES permit sets allowable effluent limits for the discharge of pollutants to surface water, and allows discharges in excess of those limits under certain narrowly-defined conditions. The Gerneral Order for Existing Milk Cow Dairies generally does not allow discharges of pollutants to either groundwater or surface water.
3. A discharge in violation of NPDES permit conditions triggers the option of citizen lawsuits to enforce the permit conditions. No equivalent provision exists under the Porter Cologne Water Quality Control Act.
4. Information submitted to the Regional Water Board in response to the General Order requirements is public information, except in limited cases, and is available for public review. Under NPDES requirements, the Notice of Intent, Waste Management Plan, Nutrient Management Plan, and the Site Specific Order containing the permit conditions are all public documents and are posted for 30 day public review and comment prior to Board consideration of adoption.

E. DAIRY WASTES

For the purposes of this Order, dairy waste includes, but is not limited to, dry manure, and process wastewater resulting from water directly or indirectly used in the management of a dairy or resulting from any of the following: spillage or overflow from animal watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Waste also

includes any water or precipitation that came into contact with raw materials, products, or byproducts such as manure, compost piles, feed, silage, milk, or bedding.

Process wastewater is another term defined by this Order. For the purposes of this Order, "process wastewater" is any water directly or indirectly used in the operation of a milk cow dairy for any or all of the following: spillage or overflow from animal watering systems; washing or spray cooling of animals; or dust control. It also includes any water or precipitation and precipitation runoff which comes into contact with any ray materials, products, or byproducts including manure, feed, milk, or bedding.

Waste generated at dairies is stored dry in piles or in liquid form in waste retention ponds. The wastes are then applied to land or transported off-site for utilization on cropland. Wastes are applied to soils of varying character and drainage characteristics, varying proximity to surface drainages and waterways, different character of geology and depth to groundwater. The wastes provide nutrients to crops, but can create nuisance conditions if improperly managed or cause pollution of surface water and/or groundwater if site conditions are not taken into account in preparing the waste management strategy. This Order regulates the management of dairy wastes onsite and requires monitoring and continuous tracking of wastes being taken off-site for utilization.

Manure from dairies contains high concentrations of salts (total dissolved solids, including constituents such as sodium and chloride) derived primarily from the feed and water sources used in the dairy production activities. Some dairies also use water softening devices for milk barn cleaning and other activities and the concentrated brines or reject water is usually sent to the retention pond, thus increasing the salt concentrations further. Manure from dairies also contains elevated levels of nutrients (including nitrogen, ammonia, phosphorus, and potassium compounds) that can be used in crop production. A review of dairy manure by a University of California Committee of Consultants (UCCC) indicates that dairy cows in the Central Valley Region excrete approximately one (1) pound (lb) of nitrogen per head per day and approximately 2.1 lbs of inorganic salts (excluding nitrogen) per head per day. Thus, a 1,000-cow dairy generates approximately 365,000 lbs of nitrogen and 767,000 lbs of inorganic salts per year that must be managed to prevent impacts to water quality.

The application of manure or the discharge of process wastewater to a land application area results in the discharge of salts and nitrogen compounds. Oxidation of nitrogen compounds (i.e., ammonia and organic nitrogen compounds) to nitrites and nitrates has the potential to degrade the quality of surface water and groundwater in the Region, if not properly managed. This is particularly so for groundwater if the wastes are applied to the land application

area at rates that exceed crop needs. The UCCC review of dairy waste recommends, based on literature review, simulations, and field studies, that in cropland application of dairy manure, the total nitrogen load of the field should not exceed 1.4 times the potential maximum nitrogen uptake by plants, suggesting that successful cropping and minimal nitrate leaching is realistic to achieve at these application rates.

Surface water can also be degraded by both the presence of pollutants in the waste stream and by the very concentrated nature of cow manure and manure wastewater. Surface water can be degraded by the presence of ammonia in the waste, which can cause ammonia toxicity to aquatic life or suppress dissolved oxygen concentrations. In addition, nitrogen and phosphorus compounds in the waste can cause excessive algal growth in surface waters, resulting in lower oxygen levels and which in turn causes fish and other organisms to die. The presence of pathogens in the waste can create a public health threat through contact with affected waters. This Order includes effluent limitations for the production area and the land application areas that are consistent with the federal regulations and which are described below. This Order also includes both surface water and groundwater limitations.

F. HOW DOES THIS ORDER COMPARE TO THE GENERAL ORDER FOR EXISTING MILK COW DAIRIES, ORDER NO. R5-2007-0035?

The organization and content of this Order generally follows that of General Order No. R5-2007-0035 (General Order). The principal changes to the General Order are as follows:

1. Within the Order:

a) At the beginning of the Findings, a new section, “Order Area and Coverage”, replaces “Scope of Coverage” in the General Order and describes which Dischargers are covered under this Order. This section includes language that provides for a one-time exclusion from permitting requirements if certain conditions are met.
b) In the Findings, a new section, “Expiration and Continuation of this Order”, describes when the Order will expire and how it may be continued.
c) In the Findings, the section on the California Environmental Quality Act (CEQA) has been completely revised to reflect the applicability of CEQA to this Order.
d) In the General Specifications, all ponds are now required to have depth markers, not just the last pond in a series.
e) A new section, “Effluent Limitations and Standards for the Production Area”, has been added following “General Specifications”. The

language of the new section modifies the General Order prohibition of discharge from the production area, allowing a discharge if certain conditions are met.

f) In Land Application Specifications, requires that areas with a high potential for soil erosion be identified, together with measures to limit erosion and pollutant runoff.

g) A new section, "Effluent Limitations and Standards for the Land Application Area", has been added following "Land Application Specifications". The language of the new section restates several requirements from other parts of the Order relative to the land application area: the requirement for a Nutrient Management Plan and prohibition of discharge of manure or process wastewater. For discharges of storm water or tailwater, turbidity cannot exceed the turbidity limitations in the basin plan. This limitation will limit discharges of nutrients, particularly phosphorus, that adhere to soil particles. Also, the maximum amounts of manure and process wastewater to be applied to each land application area each year, and the nitrogen content of this waste, must be calculated.

h) A new section, "Application for Coverage, NMP and WMP Review, and Development of Site-specific Order Terms", has been added following "Provisions". This section describes the documents that must be submitted to apply for coverage under this Order, how those documents will be made available for public review, and the Order adoption process.

i) In Required Reports and Notices and Schedule of Tasks, reports required under the General Order for which deadlines have passed have been removed.

2. Within the Monitoring and Reporting Program (MRP) (Attachment D) and its Subattachment A:

a) Some changes to the MRP and to Attachment A of the General Order that are currently proposed but not yet approved by the Executive Officer are incorporated into both documents in this Order.

b) Deadlines for commencement of certain kinds of monitoring have been removed where the deadline has already passed.

c) In Table 1, weekly visual inspections of water diversion structures and water lines has been added. Inspections of waste storage areas are increased to weekly, and recording of the exact level of wastewater in lagoons has been added. Weekly inspection of equipment used to land apply manure or process wastewater has been added.

d) In Reporting Requirements, added noncompliance with bypass and upset provisions to the list of provisions that trigger the 24 hour reporting requirement and associated submissions.

e) In Annual Reporting, added requirement for calculation of the maximum amounts of nutrients planned to be applied to each field, and calculation (rather than estimation) of the amount of nutrients actually applied to each field. Tabulation of actual crops planted and actual yields has been added. The total amount of manure and wastewater transferred to others must be calculated, instead of estimated.
f) In Attachment A to the MRP, the only change that is not part of currently proposed revisions to the MRP/Attachment A for the General Order is language in paragraph 1 indicating that dairies regulated under this Order will be combined with and ranked jointly with dairies regulated under the General Order, for purposes of prioritizing sites for individual groundwater monitoring.

3. Within the Standard Provisions and Reporting Requirements (Attachment E):

a) In Standard Provisions, language has been added in the first three provisions referencing the Federal rule, the Clean Water Act, and federal penalties for violations of the Order.
b) In Standard Provisions, Provisions #9-13 in the SPRR attached to the General Order have been moved from the SPRR into the Order itself; the provisions have to do with modification and termination of Order coverage.
c) In Standard Provisions, the wording and order of the Provisions has been changed to better follow the language in 40 CFR 122.41(a)(1) and 40 CFR 122.41(b) – (l).
d) In Standard Provisions, bypass and upset language has been added, per 40 CFR 122.41(m) and (n).
e) In General Reporting Requirements, the consequences of a "material change" (termination of coverage and issuance of an individual NPDES order) are specified. A definition of "substantial change" and its consequences (possible revision and reissuance of the Site Specific Order) has been added. A description of what happens if changes are neither material nor substantial has been added.

4. Within the Waste Management Plan (Attachment B):

a) Language has been added to indicate how changes to the Waste Management Plan can affect Site Specific Orders issued under this Order.
b) Language has been added at the end of Section II indicating that additional storage capacity needed to comply with the land application provisions of the Nutrient Management Plan will be included in the Site Specific Order terms.

5. Within the Nutrient Management Plan (Attachment C):

a) Language has been added to indicate that the NMP only includes the Narrative Rate Approach for nutrient management, which is the approach used in the General Order.
b) Language has been added to indicate how changes to the NMP can affect Site Specific Orders issued under this Order.
c) Language has been added to the end of "Contents of a Nutrient Management Plan" describing how certain other waste streams not otherwise described in this Order must be managed.
d) In "Technical Standards for Nutrient Management"/V. Nutrient Budget/B. Nutrient Application Rates/ 2. Nitrogen", language has been added to make explicit the amount of volatilization and mineralization inherent in the allowable application rate. No attempt has been made to separate which portion of the 40% or 65% loss is attributable to volatilization vs. mineralization.
e) In "Nutrient Management Plan Review", language has been added requiring the certified specialist who developed and/or modified the NMP to submit documentation verifying their qualifications.

6. Within the Definitions (Attachment H):

Definitions for "concentrated animal feeding operation" and "animal feeding operation" are have been added. The definition of "existing milk cow dairy" has been added to the "existing facility" definition. Definitions for "fecal coliform", "new source", "wastewater", and "irrigation water" have been added. The definition of "irrigation return flow" has been expanded, and language has been added to the "irrigation return flow" definition to clarify the relationship between "tailwater" and "irrigation return flow".

7. Other changes from the General Order

a) New cover sheet
b) Revised Table of Contents
c) Removed Table 1because deadlines have passed and NMP implementation must be complete at the time an NOI is submitted.
d) New Attachment A (Notice of Intent) replacing the General Order Attachment A, the Existing Conditions Report.

G. HOW DOES THIS ORDER COMPARE TO THE FEDERAL CAFO RULE?

As noted above, a permit writers guidance manual reflecting the 20 November 2008 US Environmental Protection Agency Final Rule for Concentrated Animal

Feeding Operations (CAFOs) has not yet been released. Instead, this Order has been prepared using the federal CAFO regulations and the USEPA "NPDES General Permit for Dischargers from Concentrated Animal Feeding Operations (CAFOs) in New Mexico" (NMG010000) as a basis for developing the permit requirements. The organization of this Order is, however, based on the General Order Waste Discharge Requirements (WDRs) for Existing Milk Cow Dairies, Order No. R5-2007-0035 (General Order).

There are some differences between this Order and the New Mexico NPDES General Permit:

1. This Order only covers milk cow dairy facilities. Other types of CAFOs will be covered under permits to be written in the future.

2. This Order incorporates provisions and requirements designed to be protective of groundwater.

3. This Order retains the definition of an existing facility as defined in the General Order. Dairies that have expanded their herd of mature dairy cows more than 15% since 17 October 2005 are not considered existing facilities and must apply for an individual Order. Dairies that are considered "new sources" under Federal requirements are only eligible for this Order if they can demonstrate that they meet the definition of an existing facility. If they cannot meet the definition of an existing facility, they must apply for an individual Order.

4. This Order uses the date of 17 October 2005 as the starting date for which discharges of pollutants to waters of the United States trigger a duty to apply. This date was incorporated into this Order because the operational status and number of cows at dairies as of this date has been used by Region 5 to define which dairies are "existing facilities".

~~5.This Order does not provide a process for Dischargers to file a voluntary certification that the dairy facility will not discharge. Dairy facilities in Region 5 are currently regulated under either the General Order or under individual Waste Discharge Requirements that are based on the General Order. Neither the General Order nor individual WDRs allows discharges from the production area, or discharges other than storm water and certain types of tailwater from the land application area. It is therefore unnecessary for an additional certification of no discharge to be submitted by dairies regulated under either of these orders. However, facilities that wish to submit such certifications are not precluded from doing so.~~

~~6.~~5. This Order does not require field specific calculations to evaluate dairy cropland for phosphorus loading. Instead, the Order controls the application of nitrogen to cropland and relies on erosion control measures to minimize phosphorus discharges. The Order also requires direct measurement of phosphorus in storm water and some tailwater discharges to determine if control measures are effective. For a more detailed discussion of why this Order's technical standards do not contain phosphorus-based limits on land application, see section H below, "Rationale for Not Basing Land Application Rates on Phosphorus"

~~7.~~6. For land application areas, this Order requires monitoring of some tailwater discharges and a representative portion of all storm water discharges. Federal regulations exempt return flows from irrigated agriculture from the NPDES permit program, pursuant to 40 CFR 122.3(f)., Such an exemption does not apply under California's Porter Cologne Water Quality Control Act. Accordingly, irrigation return flows are regulated by this Order.

~~8.~~7. This Order limits the application of nitrogen to 1.4 times crop uptake, or 1.65 with plant tissue testing. This limitation incorporates losses due to volatilization and mineralization, collectively totaling 40% (or 65%), but does not separate what portion of the losses are due to volatilization as opposed to mineralization. The limits on application are derived from information provided to the Central Valley Water Board from the University of California Committee of Consultants in the report "Managing Dairy Manure in the Central Valley of California", which is included in the administrative record.

~~9.~~8. This Order requires posting of the Waste Management Plan as well as the Notice of Intent, Nutrient Management Plan, and the Site Specific Order Terms. The Waste Management Plan and the Nutrient Management Plan described in this Order, taken together, contain the information required under the Federal Nutrient Management Plan.

~~10.~~9. The Site Specific Order Terms must be approved by the Central Valley Water Board for each dairy applying for coverage under this Order. Approval authority is not vested in the Executive Officer ("Regional Administrator" in the New Mexico permit).

~~11.~~10. This Order does not include a Notice of Termination form, because it was felt that a simple form would lead Dischargers to believe that nothing but the form was necessary to terminate coverage under this Order. Termination of coverage under this Order will require different steps depending on the reason for termination. For example, termination

of coverage under this Order because of permanent cessation of dairy operations is a process that begins with notification of the Central Valley Water Board but includes submittal of a closure plan, site inspection(s), and submittal of a post-closure report.

~~12.~~11. This Order uses two terms, "substantial" and "material", to describe changes that would trigger action by the Central Valley Water Board under this Order (See Standard Provisions and Reporting Requirements, Section C). A "substantial" change triggers revision and renoticing of Site Specific Order Terms; a "material" change triggers revocation of the Order and issuance of an individual Order.

H. RATIONALE FOR NOT BASING LAND APPLICATION RATES ON PHOSPHORUS

Use of animal manure as a primary source of nitrogen commonly results in applications of phosphorus at rates that exceed crop needs. Over time, phosphorus can build up in the soil. Title 40 CFR 123.36 requires this Order to contain technical standards for land application of nutrients that are consistent with 40 CFR 412.4(c)(2). In turn, 40 CFR 412.4(c)(2) requires the use of field-specific assessments to determine whether the manure and wastewater application for each field should be limited for nitrogen or for phosphorus. (See also 73 Fed. Reg. 70418, 70445). The Phosphorus Index , discussed in the US Department of Agriculture, Natural Resources Conservation Service (NRCS) conservation practice standard 90, is the assessment tool most commonly used by EPA for this determination. In fact, EPA, in promulgating its CAFO rule regulatory revision in 2008 specifically endorsed the Phosphorus Index for such assessments (*Ibid*). The Phosphorus Index does not measure the amount of phosphorus reaching surface water but is a tool designed to assess the relative risks of phosphorus loss from different fields.

The California Phosphorus Index, Revision 1, released by NRCS in April 2010, is the tool designed for California to evaluate risk of phosphorus loss from individual agricultural fields to water bodies of concern for phosphorus pollution. The Index requires the phosphorus risk assessment to be performed by following the Initial Risk Assessment flowchart. As stated in the Index, the purpose of the first box in the flowchart "is to apply a screening tool that will exclude fields with no risk to impact surfaces waters with phosphorus, or are in watersheds that have no phosphorus impacts on water quality." The first box of the flowchart states: "Is the land unit in the watershed of a water body declared to be impacted, or very likely impacted based on sampling evidence, by P from land application of organic or inorganic fertilizers for agricultural purposes?"

As stated below, the watersheds of the dairies in the Central Valley do not include surface water that has been identified as impacted from phosphorus. Accordingly, following the "No" arrow takes the user to a box which states "Further use of the P Index is not required on this land unit. Voluntary use of the Index may be considered for planning purposes to reduce the risk of p movement to unimpaired water bodies. Consider this field to be in the Low Risk category of the P Index for nutrient management planning." If a field is scored in the Low Risk category, manure application is to be based on nitrogen requirements of the crops. As recommended by the Index, this Order requires CAFOs to managing manure and process wastewater applications based on the nitrogen requirement of the crops grown on each field.

The watersheds of the dairies in the Central Valley do not include surface water that has been identified as impacted from phosphorus. In the Central Valley Region, phosphorus has not been identified as a serious surface water quality concern. The Central Valley Water Board's CWA section 303d List of Water Quality Limited Segments does not contain any listings for phosphorus. While some other regional water boards do list phosphorus as an issue in surface water, "dairies" are not listed as potential sources in these other regions. While phosphorus is listed as a potential contributor to low dissolved oxygen in the Russian River (North Coast Regional Water Board), the listing states that "nitrogen to phosphorus ratios indicate that nitrogen may be the macronutrient controlling plant growth…"

Water quality standards for surface water in the Central Valley Region are set forth in two water quality control plans (Basin Plans). These Basin Plans do not currently contain numerical criteria for phosphorus in surface water, nor are any such criteria in development. The only reference to phosphorus in the Basin Plans is in the Sacramento River & San Joaquin River Basin Plan, which includes a discussion of Clear Lake nutrients and waste load allocations for phosphorus loading to Clear Lake (IV-37.04). That waste load allocation does not identify dairies as a source of the impairment. In fact, dairies are not even a potential source of the impairment since there are no dairies in the Clear Lake area.

The Technical Standards of this Order control nitrogen application to and erosion from all land application areas that receive manure and process wastewater. As a further method to measure the effectiveness of erosion control procedures, the numeric turbidity limitations that are in the applicable Basin Plans have been restated in this Order. Since phosphorus bonds to soil particles, control of erosion is an indirect way to control off-property discharges of phosphorus.

Under this Order, discharges of storm water to surface water, whether a prohibited discharge from the production area or a permitted discharge from the land application area, must be sampled for total phosphorus and tested for turbidity. This provides a direct measurement of the effectiveness of erosion control measures. Under this Order, discharges of freshwater irrigation tailwater from land application areas, where manure or process wastewater has been applied less than 60 days prior to the freshwater irrigation, must be sampled, providing a direct measurement of total phosphorus. If these samples show that phosphorus is adversely impacting beneficial uses, the Central Valley Water Board will determine whether the Technical Standards contained in this Order remain in compliance with federal regulations, or whether they must be revised when this Order is reissued.

I. APPLICABLE REGULATIONS, PLANS, AND POLICIES

1. Legal Authorities

This Order is issued pursuant to section 40 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (CWS; commencing with section 13370). It shall serve as a NPDES permit for any existing dairy CAFO that discharges or proposes to discharge pollutants to waters of the United States on or after 17 October 2005. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).

2. Title 27 California Code of Regulations (CCR)

Division 2, Subdivision 1, Chapter 7, Subchapter 2, Article 1 of Title 27 of the California Code of Regulations (Title 27) prescribes minimum standards for discharges of animal waste at confined animal facilities to protect both surface water and groundwater. For surface water protection, Title 27 includes requirements for adequate design of containment facilities for both storm water and process wastewater and for adequate flood protection.

For groundwater protection, the minimum standards in Title 27 require existing milk cow dairies to: minimize percolation of wastewater to groundwater in disposal fields; apply manure and wastewater to disposal fields at reasonable agronomic rates; minimize infiltration of water into underlying soils in manured areas; and locate retention ponds in, or line retention ponds with, soils of at least 10% clay and no more than 10% gravel.

The Central Valley Water Board has received documentation of impacts to groundwater quality that indicates the Title 27 minimum standards may not be sufficient to adequately protect groundwater quality at all confined

animal facilities in the Region. Adverse impacts to groundwater due to discharges from existing milk cow dairies have been detected in areas where groundwater is as deep as 120 feet below ground surface and in areas underlain by fine-grained sediments.

This General Order requires Dischargers to monitor groundwater to ensure that groundwater protection is being achieved. Groundwater monitoring at existing dairies is necessary to: determine background groundwater quality; determine existing groundwater conditions near retention ponds, corrals, and land application areas; and determine the effect of the improved management practices required in the General Order on groundwater quality.

Additional information regarding the groundwater monitoring program required for all existing dairies can be found in the Information Sheet for Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order No. R5-2007-0035.

3. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of California Environmental Quality Act (CEQA), Public Resources Code sections 21100-21177, except requirements for "new sources" as defined in the Federal Water Pollution Control Act.

This permit incorporates requirements imposed under authority of the California Water Code in addition to those mandated by the Clean Water Act. The exemption under Water Code section 13389 applies to the whole of the permit and not only the provisions mandated by the Clean Water Act. (*See* State Water Board Order WQ 2001-15 (2001) (*In the Matter of the Petitions of the Building Ind. Assn. of San Diego County and Western States Petroleum Assn.*), affd. *Building Ind. Assn. of San Diego v. San Diego Baykeeper* (Dec. 7, 2004, D042385,Cal.App.4th), nonpub. (rejecting contention that section 13389 exemption applies to a permit only to the extent that the specific provisions of the permit are required by the federal Clean Water Act)).

Any facility that is a "new source," as that term is defined in CWA section 306 and Code of Federal Regulations, title 40, sections 122.2 and 122.29, must demonstrate that it is an "existing facility" under CEQA Guidelines Exemption 1 for Existing Facilities (Cal. Code of Regs., tit. 14, §15301) before a Notice of Applicability for coverage under this Order can be issued for the project. New sources that do not qualify for the Existing Facilities categorical exemption will be required to submit an application

for an individual NPDES permit and action on that application will require compliance with CEQA.

CEQA Guidelines Exemption 1 for Existing Facilities (Cal. Code of Regs., tit. 14, §15301) applies to "*…the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination…*" Consistent with Waste Discharge Requirements General Order No. R5-2007-0035, under which the majority of dairy AFOs are currently regulated in the Central Valley, the environmental baseline for this action is considered the milk cow dairies as they and their surrounding physical environment existed on 17 October 2005.

The analysis of whether an action represents "*negligible or no expansion of use beyond that existing at the time of the lead agency's determination*" (Cal. Code of Regs., tit. 14, §15301) is made with reference to the environmental baseline applicable to the CEQA review. While the "*environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published or . . . at the time environmental analysis is commenced . . . will normally constitute the baseline physical conditions*" (Cal. Code of Regs., tit. 14, §15125(a)), the lead CEQA agency has discretion in setting an appropriate baseline for purposes of the environmental analysis (including the determination of whether a facility is an "existing facility" with reference to that baseline). (*See, e.g., Fat v. County of Sacramento* (2002) 97 Cal.App.4th 1270, 1277-78.) Here, 17 October 2005, constitutes a reasonable point in time to evaluate the baseline because it represents the date on which the Board commenced its environmental analysis in support of the General Order No. R5-2007-0035, which is applicable to all existing dairy facilities including those that may now seek coverage under this Order. 17 October 2005 is the date on which the applications for coverage under the General Order were due and these applications provided the most comprehensive set of environmental data available on the dairy facilities for purposes of analysis of the environmental setting for this Order as well. Setting the baseline at 17 October 2005, rather than a later date, is an appropriate exercise of the Board's discretion additionally because moving the baseline forward could exempt from CEQA review the Board's action on a number of facilities that would otherwise have been subject to CEQA, thereby underestimating the environmental impacts associated with the Board's action on this Order. (*See Save Our Peninsula Com. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99.)

4. Water Quality Control Plans

The Central Valley Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River*, Fourth Edition, revised September 2009 and *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition, revised January 2004, (hereinafter Basin Plans) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plans implement State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plans identify typical beneficial uses as follows: municipal and domestic supply, agricultural irrigation, stock watering, process supply, service supply, hydropower supply, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater habitat, warm fish migration habitat, cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, navigation, rare, threatened, or endangered species habitat, groundwater recharge, and freshwater replenishment.

Requirements of this Order implement the Basin Plans.

5. State and Federal Antidegradation Policies

As specified in Finding 39 of this Order, this Order is consistent with State Board Resolution 68-16 and with Code of Federal Regulations Title 40, section 131.12. State Water Board Resolution 68-16 (State Antidegradation Policy) requires that existing high quality of waters must be maintained until it is demonstrated that any change is consistent with the maximum benefit of the people of the state and that it will not unreasonably affect present and anticipated beneficial uses or, violate the Basin Plans and any other policies . Additionally, any activity that discharges waste to high quality waters must be required to meet waste discharge requirements which will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure that (a) pollution or nuisance will not occur and (b) the highest water quality consistent with the maximum benefit to the people of the state will be maintained. With respect to surface water, Resolution 68-16 must be implemented consistent with Title 40 Code of Federal Regulations Section 131.12 (Federal Antidegradation Policy). Resolution No. 68-16 incorporates the Federal Antidegradation Policy where the federal policy applies under federal law. The Central Valley Water Board's Basin Plan implements, and

incorporates by reference, both the State and Federal Antidegradation Policies.

The State and Federal Antidegradation Policies apply only to high quality waters. High quality waters are water bodies with levels of water quality constituents or characteristics that are better than the established water quality objectives.[1] Whether a water is a high quality water is established by constituent or parameter. Waters can be of high quality for some constituents or beneficial uses, but not for others. In the context of this Order, which may potentially regulate discharges to numerous water bodies, each with a number of constituents, there is not sufficient data to fully determine which waters, if any, are high quality waters. To the extent a discharge under this Order may be to high quality waters, this Order is nevertheless consistent with the Federal and State Antidegradation Policies as outlined below

i. This Order does not authorize any further degradation to groundwater as specified in the groundwater limitations. Any further degradation that may occur is therefore in violation of the Order and limited to the period of monitoring of water quality impacts and upgrading and implementation of required waste management measures. It should be noted that this Order addresses impacts from future discharges of waste, but does not address the cleanup of existing degraded surface and groundwater from past dairy operations. Any required cleanup actions are handled under separate authority under the Water Code.

ii. This Order additionally requires, as a floor, that discharges of waste from the dairy facilities not cause groundwater to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance. Further, with regard to surface water discharges, this Order prohibits the discharge of wastewater to surface water from the land application area, the discharge of storm water to surface water from the land application area unless the land application area has been managed consistent with a certified Nutrient Management Plan, and any discharge to surface waters which causes or contributes to an exceedance of any applicable water quality objective in the Basin Plans or any applicable state or federal water quality criteria, or a violation of any applicable state or federal policies or regulations. Surface water discharges of wastewater and stormwater are prohibited from the

[1] Under the federal standard, such waters are waters “where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.” 40 CFR 131.12.

production area unless the production area is designed, constructed, operated, and maintained to retain all facility process wastewater generated during the storage period together with all precipitation on and drainage through manured areas, up to and including during a 25-year, 24-hour storm.

iii. To be consistent with the State and Federal Antidegradation Policies , Dischargers must employ best practicable treatment or control measures to minimize any degradation that may be permitted. This Order requires the implementation of BPTC as follows:

a) Best Practicable Treatment Or Control Measures For Retention Ponds

The most conservative pond design would include a double lined pond with a leachate collection and removal system between two geosynthetic liners. Such pond designs are currently being approved by the Central Valley Water Board to contain landfill leachate.

This Order requires that new retention ponds or reconstructed existing ponds be designed and constructed to comply with the groundwater limitations in the Order. The Order provides a two-tiered approach that will allow the Discharger two options to retention pond design. This approach will significantly reduce the time required for approval by the Executive Officer. Tier 1 includes a retention pond designed to consist of a double liner constructed with 60-mil high density polyethylene or material of equivalent durability with a leachate collection and removal system (constructed in accordance with Section 20340 of Title 27) between the two liners. This design will be considered to be consistent with the State Antidegradation Policy.

For existing ponds, this Order requires dischargers to provide an engineering evaluation and propose and implement remedial measures when groundwater monitoring demonstrates that the existing pond has adversely impacted groundwater quality. Groundwater monitoring in accordance with Subattachment A to the MRP (Attachment D) is required to determine if an existing pond complies with the Groundwater Limitations of the Order.

b) Best Practicable Treatment or Control Measures for Land Application Areas

Pursuant to Title 40 Code of Federal Regulations Section 122.23(e), precipitation- related discharges from land application areas are considered agricultural storm water discharges and are not subject to the United States Environmental Protection Agency (USEPA) regulations for concentrated animal feeding operations (CAFOs) if the "…manure, litter, or process wastewater has been applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater, as specified in Section 122.42(e)(1)(vi)-(ix)…"

The USEPA has established best practicable control technology currently available for application of waste from large concentrated animal feeding operations to land application areas. The best practicable control technology includes best management practices required by Title 40 Code of Federal Regulations Section 122.42(e)(1)(vi)-(ix).

The technical standards for nutrient management as specified in Attachment C of this Order are consistent with the USEPA best practicable control technology and the best management practices required by Title 40 Code of Federal Regulations Section 122.42(e)(1)(vi)-(ix) and the large CAFO best practicable control technology. Therefore, precipitation-related discharges from land application areas at facilities operating in compliance with this Order are agricultural storm water discharges. And since they are consistent with USEPA best practicable control technology, the technical standards for nutrient management represent best practicable treatment or control for the purposes of the State Antidegradation Policy.

Normal commercial farming practices, including those involving dairy waste, contribute salts, nutrients, pesticides, trace elements, sediments and other by-products that can affect the quality of surface water and groundwater. Evaporation and crop transpiration remove water from soils, which can result in an accumulation of salts in the root zone of the soils at levels that retard or inhibit plant growth. Additional amounts of water often are applied to leach the salts below the root zones. The leached salts can reach groundwater or surface water. Even using the most efficient irrigation systems and appropriate fertilizer application rates and timing to correspond to crop needs, irrigation of cropland will have some measurable impact on existing high quality

groundwater as a result of the leaching required to protect the crops from salt buildup in the root zone.

In land applications areas where groundwater is shallow, some Dischargers have installed subsurface (tile) drainage systems to maintain the groundwater level below the crop's root zone. Drainage from these systems may be discharged directly to surface water bodies or to drainage ditches that discharge to surface water bodies. Some of these systems discharge to evaporation basins that are subject to waste discharge requirements. Discharges from these systems have elevated concentrations of salts, including nitrates and other nutrients. This Order requires Dischargers who have these systems to identify their location and discharge point and to monitor discharges from these systems.

Consistent with the State Antidegradation Policy, this Order requires that process wastewater that is applied to land application areas under the Discharger's control: (1) be managed according to a certified Nutrient Management Plan that is consistent with the technical standards specified in Attachment C, and (2) not cause groundwater to exceed the groundwater limitations of this Order.

iii. To the extent this Order results in degradation to high quality waters, it is consistent with the maximum benefit to the people of the state.

iv. Administrative Procedures Update 90-004 (Antidegradation Policy Implementation for NPDES Permitting) applies to this Order to the extent it regulates NPDES discharges to surface water. As stated previously, this Order prohibits all surface water discharges from the land application area, except discharges that are agricultural return flow or agricultural storm water discharges. Additionally, this Order prohibits discharges from the production area unless the production area is designed, constructed, operated, and maintained to retain all facility process wastewater generated during the storage period together with all precipitation on and drainage through manured areas, up to and including during a 25-year, 24-hour storm. Under the standard provisions of NPDES permitting, this Order may permit discharges to surface water under upset or bypass conditions.

A complete antidegradation analysis is not required under APU 90-004 if "a regional board determines the reduction in water quality is

temporally limited and will not result in any long-term deleterious effects on water quality; e.g. will cease after a storm event is over." Given the narrow circumstances in which a discharge to surface waters is permitted (a 25-year 24-hour storm event, upset, or bypass), any reduction in water quality is expected to be temporally limited and not result in any long-term deleterious effects on water quality.

Further, a complete antidegradation analysis under APU 90-004 is appropriate where there is issuance of a permit for a new discharge. This Order does not provide coverage for discharges that are new sources not existing as of 17 October 2005. (*See* Finding 17 and a complete antidegradation analysis is accordingly not implicated)**.**

6. State Water Board Resolution 88-63

State Water Board Resolution 88-63 specifies that all surface waters and groundwaters of the state are considered to be suitable, or potentially suitable, for municipal or domestic water supply except where the groundwater meets one or more of the criteria specified in the Basin Plan, including:

a) The TDS exceeds 3,000 milligrams per liter (mg/L) (5,000 micromhos per centimeter (umhos/cm) electrical conductivity) and the aquifer cannot reasonably be expected by the Regional Board to supply a public water system;

b) There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices; or

c) The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

Both Basin Plans include criteria for granting exceptions to municipal and domestic supply designation based on Resolution 88-63. The Tulare Lake Basin Plan also includes criteria for granting exceptions to the designation of beneficial uses for agricultural supply and industrial supply. De-designation of a beneficial use requires an amendment to the Basin Plan. The Tulare Lake Basin Plan specifies exceptions to the designated beneficial uses for some groundwater within the Tulare Lake Basin.

Exceptions to Resolution 88-63 are not self-implementing, but must be established in an amendment to the Basin Plan.

7. State Water Board Resolution 92-49

State Water Board Resolution 92-49 contains policies and procedures for Regional Water Quality Control Boards (Regional Boards) to follow for the oversight and regulation of investigations and cleanup and abatement activities from all types of discharge or threat of discharge subject to Section 13304 of the California Water Code. It directs the Regional Boards to ensure that dischargers cleanup and abate the effect of discharges. This cleanup and abatement is to be done in a manner that promotes attainment of background water quality, or the highest water quality that is reasonable if background levels of water quality cannot be restored. Any cleanup less stringent than background water quality shall be consistent with maximum benefit to the people of the state and not unreasonably affect present and anticipated beneficial uses of such water.

The Central Valley Water Board may order cleanup and/or abatement actions pursuant to California Water Code Section 13304 and State Water Board Resolution 92-49 where groundwater monitoring indicates discharges from a dairy have impacted groundwater quality.

8. Endangered Species Act

This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

9. Impaired Water Bodies on CWA 303(d) List

Under Section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 section 303(d) List of Water Quality Limited Segments. The Basin Plans reference this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of*

appropriate limitations for point sources (40 CFR Part 130, et seq.)." The Basin Plans also state, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." Impaired waters do not support beneficial uses. If proposing to discharge into impaired surface waters, the Discharger must provide wastewater analysis of the 303(d) listed constituents of concern as part of the application.

J. EFFLUENT LIMITATIONS

Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. Effluent limitations are typically established based on the technology available to control the pollutants (i.e., technology-based effluent limits) and limits that are protective of water quality standards of the receiving water (i.e., water quality-based effluent limits).

1. Technology-based effluent limitations

Technology-based effluent limits are intended to achieve a minimum level of treatment of pollutants for point source discharges. Technology-based effluent limitations that would apply to a CAFO are defined in 40 CFR Part 412.

a) Production Area Effluent Limitations

The *Effluent Limitation Guidelines* in Title 40 CFR Part 412 that apply to existing CAFOs regulated under this Order are contained in Subpart C (Dairy Cows and Cattle Other Than Veal Calves). This Order includes the technology-based effluent limitations of Title 40 CFR Part 412 for the production area that prohibit the "*…discharge of manure, litter, or process wastewater pollutants into waters of the U.S. from the production area….*" except when "*…precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided (i) The production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rainfall event; (ii) The production area is operated in accordance with the additional measures and records required by Section 412.37(a) and (b).*"

b) Land Application Area Effluent Limitations

Subpart C of Title 40 CFR Part 412 also includes effluent limitations for land application areas that require development and implementation of the best management practices (BMPs) specified in Section 412.4 and maintenance of records specified in Section 412.37. The BMPs specified in Section 412.4 include the development and implementation of a nutrient management plan (NMP) based on a field-specific assessment of the potential for nitrogen and phosphorus transport from the field and that addresses the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing nitrogen and phosphorus movement to surface waters. The NMP must include: a determination of application rates of manure and process wastewater that minimizes phosphorus and nitrogen transport from the field to surface waters in compliance with the technical standards for nutrient management; annual sampling of manure for nitrogen and phosphorus content and soil sampling once every five years for phosphorus content; periodic inspections of land application equipment for leaks; and setback requirements of at least 100 feet between applied manure or wastewater and any down gradient surface waters, open tile line intake structures, sinkholes, agricultural wellheads, or other conduits to surface waters unless an acceptable alternative practice or field-specific condition will provide equivalent or better pollutant discharge reductions.

This Order includes the technology-based effluent limitations of Title 40 CFR Part 412 for the land application area, except that, as described in Section H above, the field-specific assessment of the risk of phosphorus transport is not necessary at this time. This Order limits phosphorus indirectly through its erosion controls and requires direct monitoring of the quantity of phosphorus in storm water and some tailwater discharges.

2. Water Quality-Based Effluent Limitations

In cases where it is determined that technology-based effluent limits are not sufficient to ensure that water quality standards will be attained in the receiving water, the Clean Water Act and NPDES regulations require that more stringent, water quality-based effluent limits be established.

a) <u>Production Area Effluent Limitations</u>

It is not possible in this Order to determine if the technology-based effluent limitations for the production area will ensure that water quality standards will be attained in the receiving water at every CAFO. However, this Order includes an additional limitation that prohibits any allowed discharge from causing the receiving water to exceed water quality objectives as specified in the Basin Plan(s). This Order also includes additional required design standards, management practices, provisions, and monitoring requirements to further ensure that water quality standards will be attained in the receiving water. These additional limitations include requirements that:

- The confinement facility must be protected from inundation or washout by overflow from stream channels during specified storm events;
- All clean water and run-on is diverted away from manured areas, unless such drainage is fully contained;
- Salt in animal rations shall be limited to the amount required to maintain animal health and optimum production;
- Proper disposal or utilization of all manure and animal waste impacted soils, including soil from the retention pond(s) upon cessation of operations; and
- Groundwater monitoring will be conducted to demonstrate that facility design and operation is protecting groundwater.

b) Land Application Area Effluent Limitations

In the Preamble to the federal regulations, USEPA states "*EPA does not expect that water quality-based effluent limitations will be established for CAFO discharges resulting from the land application of manure, litter, or process wastewater*." However, this Order does include additional requirements for the land application areas beyond the effluent limitations required in the federal regulations to ensure that water quality is protected. These additional requirements include:

- Infiltration of applied wastewater completely within 72 hours after application;

- No wastewater application to land application areas during periods when the soil is at or above field capacity unless consistent with a certified NMP, and no application of manure or process wastewater to standing water;

- No discharge of runoff to surface water from the land application area due to application of wastewater;

- The discharge of storm water runoff to surface water from a land application area where manure or wastewater has been applied is prohibited unless the land application area has been managed to prevent runoff consistent with an approved Nutrient Management Plan (NMP);

- No discharge from the land application area of storm water that has commingled with wastewater; and

- Groundwater monitoring will be conducted to ensure that the Nutrient Management Plan and BMPs used in the land application area are protecting groundwater.

K. RECEIVING WATER LIMITATIONS

The appropriate receiving water limitations for a particular dairy covered under this Order depend on the beneficial uses of the water as designated in the Basin Plan(s) and the water quality objectives necessary to protect all beneficial uses of the water. The numeric water quality objectives and numeric limits that are relevant and appropriate to implement narrative water quality objectives applicable to the primary waste constituents of concern in discharges of waste at dairy facilities that could affect groundwater and surface water are as follows: For groundwater, the most stringent limitations to implement narrative and numeric water quality objectives are for total coliform 2.2/100 milliliter (ml), for ammonia-nitrogen 1.5 mg/L, for boron 0.7 mg/L, for chloride 106 mg/L, for nitrate-nitrogen 5 mg/L, for EC 700 µmhos/cm, and for TDS 450 mg/L. For surface water, the most stringent limitations to implement narrative and numeric water quality objectives and criteria are for total coliform 2.2/100 ml, for chloride 106 mg/L, for nitrate-nitrogen 5 mg/L, for EC 700 umhos/cm, and for TDS 450 mg/L. For surface water, the appropriate limitation for ammonia is 0.02 mg/L un-ionized ammonia or a concentration of total ammonia determined by the pH and fish species, whichever is less. Less stringent limitations may apply to different areas but can only be determined through a site-specific assessment. Individual dischargers may propose the application of less stringent limitations for consideration in monitoring and reporting programs or through revision of this General Order. Dairy waste may include other waste constituents not mentioned here. This Order requires the discharge to comply with all water quality

objectives and federal water quality criteria for surface waters applicable to the discharge.

This Order prohibits: the direct or indirect discharge of waste and/or storm water from the production area to surface waters except under certain limited conditions; the discharge of waste from existing milk cow dairies to surface waters which causes or contributes to an exceedance of any applicable water quality objective in the Basin Plans or any applicable state or federal water quality criteria, or a violation of any applicable state or federal policies or regulations.

The groundwater limitations of this Order require that "Discharge of waste at facilities shall not cause the underlying groundwater to be further degraded, to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance." These limitations are consistent with the Basin Plan(s) and State Water Board Resolution 68-16.

L. LAND APPLICATION SPECIFICATIONS

This Order includes land application specifications that require Dischargers to implement a NMP that provides protection of both surface water and groundwater. The contents of the NMP and technical standards for nutrient management are specified in Attachment C to this General Order. The land application specifications also require Dischargers to have a written agreement with each third party that receives process wastewater from the Discharger for its own use. The written agreement will be effective until the third party is covered under waste discharge requirements or a waiver of waste discharge requirements that are adopted by the Central Valley Water Board and that are specific to the application of the Discharger's process wastewater to land under the third party's control.

The written agreement must identify the Discharger, the third party, the Assessor's Parcel Number and acreage of the cropland where the process wastewater will be applied, and the types of crops to be fertilized with the process wastewater. The written agreement must also include an agreement by the third party to: (1) use the process wastewater at agronomic rates appropriate for the crop(s) grown, and (2) prevent the runoff to surface waters of wastewater, storm water or irrigation supply water that has come into contact with manure or is blended with wastewater.

The technical standards for nutrient management require Dischargers to monitor soil, manure, process wastewater, irrigation water, and plant tissue as specified in the Monitoring and Reporting Program. The results of this monitoring are to be used in the implementation of the NMP.

This Order also requires Dischargers to create and maintain specific records to document implementation and management of the minimum elements of the NMP, records for the land application area, a copy of the Discharger's NMP, and records on manure, bedding, and process wastewater transferred to other persons.

M. PROVISIONS

1. Standard Provisions

This Order includes Standard Provisions and Reporting Requirements.

2. Monitoring and Reporting Program Requirements

This Order includes a provision that requires compliance with the Monitoring and Reporting Program, and future revisions thereto, or with an individual monitoring and reporting program, as specified by the Central Valley Water Board or the Executive Officer. The Monitoring and Reporting Program requires:

- periodic inspections of the production area and land application areas
- monitoring of manure, process wastewater, crops, and soil
- recording of operation and maintenance activities
- groundwater monitoring
- storm water monitoring
- monitoring of surface water and discharges to surface water
- annual reporting
- annual reporting of groundwater monitoring
- annual storm water reporting
- noncompliance reporting
- discharge reporting

N. ENFORCEMENT

The State Water Board's Water Quality Enforcement Policy (Enforcement Policy) allows progressive enforcement action for violations of waste discharge requirements when appropriate and recommends more formal enforcement as a first response to more consequential violations. Progressive enforcement is an escalating series of actions that allows for the efficient and effective use of enforcement resources to: 1) assist cooperative dischargers in achieving compliance; 2) compel compliance for repeat violations and recalcitrant violators; and 3) provide a disincentive for noncompliance. Progressive enforcement actions may begin with informal enforcement actions such as a verbal, written, or electronic communication between the Central Valley Water Board and a Discharger. The purpose of an informal enforcement action is to quickly bring

the violation to the discharger's attention and to give the discharger an opportunity to return to compliance as soon as possible. The highest level of informal enforcement is a Notice of Violation.

The Enforcement Policy recommends formal enforcement actions for the highest priority violations, chronic violations, and/or threatened violations. Violations of this Order that will be considered as high priority violations include, but are not limited to:

- Any discharge of waste and/or storm water from the production area to surface waters.
- The application of waste to lands not owned, leased, or controlled by the Discharger without written permission from the landowner.
- The discharge of wastewater to surface water from cropland.
- Failure to submit notification of a discharge to surface water in violation of this Order.
- Falsifying information or intentionally withholding information required by applicable laws, regulations or an enforcement order.
- Failure to submit a Design Report for any new or enlarged existing settling, storage, or retention pond prior to construction and/or Post Construction Report for such construction.
- Failure to pay annual fee, penalties, or liabilities.
- Failure to monitor as required.
- Failure to submit required reports on time.

O. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the issuance of WDRs that will serve as a general NPDES permit for any existing dairy animal feeding operation that discharges or proposes to discharge pollutants to waters of the United States on or after 17 October 2005. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

1. Notification of Interested Parties

The Central Valley Water Board has notified interested agencies, parties, and persons of its intent to prescribe this Order for existing milk cow dairy CAFOs and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided to interested parties through specific mailings, distribution through the Central Valley Water Board Lyris Email System and through publication in major newspapers for the following communities: Fresno, Sacramento, ~~Modesto, Stockton,~~ and Redding

2. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Central Valley Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on ~~5 November 2010~~20 October 2011.

3. Public Hearing

The Central Valley Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and the following location:

Date: ~~8, 9, 10 December 2010~~30 November and 1 and 2 December, 2011
Time: 9:00 a.m.
Location: Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Central Valley Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is http://www.waterboards.ca.gov/centralvalley/ where you can access the current agenda for changes in dates and locations.

4. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Central Valley Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

5. Information and Copying

The tentative WDRs, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

6. Register of Interested Parties

Any person interested in being placed on the mailing list for information regarding the general WDRs and NPDES permit should contact the Central Valley Water Board, reference the general WDRs and NPDES permit, and provide a name, address, and phone number.

7. Additional Information

Requests for additional information or questions regarding this Order should be directed to Charlene Herbst at (916) 464-4724.